

AMENDMENTS TO THE CLAIMS

With this Amendment, no claims are amended, claims 6-12 are canceled, and new claims 13-40 are added. As of this Amendment, the status of the claims (claims 1-5 and 13-40) is as follows:

1. (Original) An isolated single or double-stranded DNA molecule which encodes a porcine adipocyte polypeptide, leptin, the molecule consisting of the nucleotide sequence SEQ ID NO: 1 or an allelic variant thereof.
2. (Original) An expression vector comprising the DNA molecule according to claim 1.
3. (Original) The vector according to claim 2 in which the vector is a plasmid.
4. (Original) A host cell transformed or transfected with the plasmid of claim 3.
5. (Original) An isolated mRNA molecule for encoding a porcine adipocyte polypeptide leptin, the mRNA molecule of SEQ ID NO: 1 or an allelic variant thereof.
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (New) An isolated single or double-stranded DNA molecule which encodes a porcine adipocyte polypeptide leptin that hybridizes to a nucleotide sequence of SEQ ID NO: 1.

14. (New) The isolated single or double-stranded DNA molecule of claim 13 wherein the isolated DNA molecule hybridizes to at least 20 bases of the nucleotide sequence of SEQ ID NO: 1.

15. (New) The isolated single or double-stranded DNA molecule of claim 13 wherein the isolated DNA molecule hybridizes to at least 50 bases of the nucleotide sequence of SEQ ID NO: 1.

16. (New) The isolated single or double-stranded DNA molecule of claim 13 wherein the isolated DNA molecule hybridizes to substantially all of the bases of the nucleotide sequence of SEQ ID NO: 1.

17. (New) The isolated single or double-stranded DNA molecule of claim 13 wherein the isolated DNA molecule is at least 20 bases.

18. (New) The isolated single or double-stranded DNA molecule of claim 13 wherein the isolated DNA molecule is at least 50 bases.

19. (New) The isolated single or double-stranded DNA molecule of claim 1 wherein the allelic variant is capable of hybridizing to at least 20 bases of the nucleotide sequence of SEQ ID NO:3.

20. (New) The isolated single or double-stranded DNA molecule of claim 1 wherein the allelic variant is capable of hybridizing to at least 50 bases of the nucleotide sequence of SEQ ID NO:3.

21. (New) An isolated single or double-stranded DNA molecule which encodes a porcine adipocyte polypeptide leptin, the molecule consisting of the nucleotide sequence SEQ ID NO:3 or an allelic variant thereof, wherein the allelic variant is capable of hybridizing to substantially all of the nucleotide sequence of SEQ ID NO:3.

22. (New) An isolated single or double-stranded DNA molecule which encodes a porcine adipocyte polypeptide leptin, the molecule consisting of the nucleotide sequence SEQ ID NO:3 or a functional derivative thereof, wherein the DNA molecule or the functional derivative thereof hybridizes to the nucleotide sequence of SEQ ID NO:3 when placed in contact with the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

23. (New) The isolated DNA molecule of claim 22 wherein the isolated DNA molecule or the functional derivative thereof hybridizes to substantially all of the nucleotide sequence of SEQ ID NO:3 when placed in contact with the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

24. (New) An isolated single or double-stranded DNA molecule which encodes a porcine adipocyte polypeptide leptin, the DNA molecule consisting of the nucleotide sequence SEQ ID NO:3 or a variant thereof, wherein the DNA molecule or the variant thereof hybridizes to substantially all of the nucleotide sequence of SEQ ID NO:3 when placed in contact with the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

25. (New) An isolated mRNA molecule which encodes a porcine adipocyte polypeptide leptin, the mRNA molecule encoded by the nucleotide sequence SEQ ID NO:3 or a variant of the mRNA molecule, wherein the mRNA molecule or the variant of the mRNA molecule hybridizes to the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 when placed in contact with the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

26. (New) The isolated mRNA molecule of claim 25 wherein the mRNA molecule or the variant of the mRNA molecule hybridizes to substantially all of the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3.

27. (New) An isolated mRNA molecule which encodes a porcine adipocyte polypeptide leptin, the mRNA molecule encoded by the nucleotide sequence SEQ ID NO:3 or a functional derivative thereof, wherein the functional derivative of the isolated mRNA molecule hybridizes to substantially all of the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 when placed in contact with the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

28. (New) An isolated mRNA molecule which encodes a porcine adipocyte polypeptide leptin, the mRNA molecule encoded by the nucleotide sequence SEQ ID NO:3 or an allelic variant thereof, wherein the allelic variant hybridizes to substantially all of the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 when placed in contact with the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

29. (New) An isolated mRNA molecule which encodes a porcine adipocyte polypeptide leptin, wherein the isolated mRNA molecule hybridizes to substantially all of an mRNA molecule encoded by a nucleotide sequence of SEQ ID NO:3 when placed in contact with the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

30. (New) An isolated mRNA molecule which encodes a porcine adipocyte polypeptide leptin, wherein the isolated mRNA molecule hybridizes to an mRNA molecule encoded by a nucleotide sequence of SEQ ID NO:3 when placed in contact with the mRNA molecule encoded by the nucleotide sequence of SEQ ID NO:3 under hybridizing conditions.

31. (New) A method for detecting DNA which encodes a porcine leptin polypeptide, the method comprising:

extracting DNA from a biological sample derived from a pig, wherein the biological sample is capable of expressing the porcine leptin polypeptide;
contacting the extracted DNA with a leptin DNA probe comprising at least 20 nucleotide bases of SEQ ID NO:1 under hybridizing conditions to form a hybridized DNA complex; and
detecting the hybridized DNA complex.

32. (New) The method of claim 31 and further including isolating the hybridized DNA complex to form an isolated leptin DNA molecule.

33. (New) The method of claim 32 and further including sequencing the isolated leptin DNA molecule.

34. (New) The method of claim 31 wherein the extracted DNA is amplified prior to contacting with the leptin DNA probe.

35. (New) A method for isolating DNA which encodes for a porcine leptin polypeptide, the method comprising:

extracting DNA from a biological sample derived from a pig, wherein the biological sample is capable of expressing the porcine leptin polypeptide;
contacting the biological sample with a leptin DNA probe comprising at least 50 nucleotide bases of SEQ ID NO:1 under hybridizing conditions to form a hybridized complex;
detecting the hybridized complex; and
isolating the hybridized complex.

36. (New) The method of claim 35 and further including sequencing the isolated hybridized complex.

37. (New) A method of determining the susceptibility of a pig to fat deposition, the method comprising:

- digesting a DNA sequence encoding porcine leptin polypeptide using at least one restriction endonuclease to form at least one control leptin DNA fragment;
- separating the control leptin DNA fragment using gel electrophoresis to form a pattern of bands comprising at least one control leptin DNA fragment;
- detecting the pattern of bands comprising the control leptin DNA fragment;
- digesting leptin DNA extracted from a pig sample with the at least one restriction endonuclease to form at least one leptin DNA sample fragment;
- separating the leptin DNA sample fragment using gel electrophoresis to form a pattern of bands comprising at least one leptin DNA sample fragment;
- detecting the pattern of bands comprising the leptin DNA sample fragment; and
- comparing the pattern of bands comprising the control leptin DNA fragment to the pattern of bands comprising the leptin DNA sample fragment.

38. (New) The method of claim 36 wherein the DNA sequence encoding porcine leptin polypeptide is the DNA sequence of SEQ ID NO:1.

39. (New) The method of claim 36 wherein the DNA sequence encoding porcine leptin polypeptide is the DNA sequence of SEQ ID NO:3.

40. (New) A method of determining the susceptibility of a pig to fat deposition, the method comprising:

fragmentizing a DNA sequence encoding porcine leptin polypeptide using at least one restriction endonuclease to form at least one control leptin DNA fragment;
separating the control leptin DNA fragment using gel electrophoresis to form a pattern of bands comprising at least one control leptin DNA fragment;
detecting the pattern of bands comprising the control leptin DNA fragment;
fragmentizing leptin DNA extracted from a pig sample with the at least one restriction endonuclease to form at least one leptin DNA sample fragment;
separating the leptin DNA sample fragment using gel electrophoresis to form a pattern of bands comprising at least one leptin DNA sample fragment;
detecting the pattern of bands comprising the leptin DNA sample fragment; and
comparing the pattern of bands comprising the control leptin DNA fragment to the pattern of bands comprising the leptin DNA sample fragment.